

## CONTENTS OF VOLUME 15

### Special Invited Papers, Articles and Short Communications

ANDERSON, T. W. Discussion of "What is an analysis of variance?" by Speed .....	911-913
ATHREYA, K. B. Bootstrap of the mean in the infinite variance case .....	724-731
BAILEY, R. A. Discussion of "What is an analysis of variance?" by Speed .....	913-916
BASAWA, I. V. Asymptotic distributions of prediction errors and related tests of fit for nonstationary processes .....	46-58
BEDER, JAY H. A sieve estimator for the mean of a Gaussian process .....	59-78
BERAN, R. AND MILLAR, P. W. Stochastic estimation and testing	1131-1154
BHATTACHARYA, P. K. AND MACK, Y. P. Weak convergence of $k$ -NN density and regression estimators with varying $k$ and applications .....	976-994
BICKEL, P. J. AND RITOV, Y. Efficient estimation in the errors in variables model .....	513-540
BIRGÉ, LUCIEN. Estimating a density under order restrictions: Nonasymptotic minimax risk .....	995-1012
BIRGÉ, LUCIEN. On the risk of histograms for estimating decreas- ing densities .....	1013-1022
BLOM, GUNNAR. Harald Cramér 1893-1985 .....	1335-1350
BOBROVSKY, B. Z., MAYER-WOLF, E. AND ZAKAI, M. Some classes of global Cramér-Rao bounds .....	1421-1438
BOENTE, GRACIELA, FRAIMAN, RICARDO AND YOHAI, VICTOR J. Qualitative robustness for stochastic processes .....	1293-1312
BRILLINGER, DAVID R. Discussion of "What is an analysis of variance?" by Speed .....	916-917
CABRERA, JAVIER AND LO, ALBERT Y. Bayes procedures for rotationally symmetric models on the sphere .....	1257-1268
CARROLL, RAYMOND J., GALLO, PAUL P. AND GLESER, LEON JAY. The limiting distribution of least squares in an errors-in-vari- ables regression model .....	220-233
CARROLL, RAYMOND J., RUPPERT, DAVID AND SIMPSON, DOUGLAS G. $M$ -estimation for discrete data: Asymptotic distribution theory and implications .....	657-669
CASELLA, GEORGE. Conditionally acceptable recentered set esti- mators .....	1363-1371
CASELLA, GEORGE AND MAATTA, JON M. Conditional properties of interval estimators of the normal variance .....	1372-1388
CHAN, N. H. AND WEI, C. Z. Asymptotic inference for nearly nonstationary AR(1) processes .....	1050-1063
CHANG, MYRON N. AND YANG, GRACE L. Strong consistency of a nonparametric estimator of the survival function with doubly censored data .....	1536-1547

CHENG, CHING-SHUI. An application of the Kiefer-Wolfowitz equivalence theorem to a problem in Hadamard transform optics .....	1593-1603
CHENG, CHING-SHUI. An optimization problem with applications to optimal design theory .....	712-723
CHO, SINSUP AND MILLER, ROBERT B. Model-free one-step-ahead prediction intervals: Asymptotic theory and small sample simulations .....	1064-1078
CHOW, MO SUK. A complete class theorem for estimating a non-centrality parameter .....	800-804
CHOW, YUNSHYONG. Estimating trajectories .....	552-567
CHRISTOPEIT, N. AND TOSSTORFF, G. Strong consistency of least-squares estimators in the monotone regression model with stochastic regressors .....	568-586
COHEN, ARTHUR AND SACKROWITZ, HAROLD B. Unbiasedness of tests for homogeneity .....	805-816
CRISTÓBAL CRISTÓBAL, J. A., FARALDO ROCA, P. AND GONZÁLEZ MANTEIGA, W. A class of linear regression parameter estimators constructed by nonparametric estimation .....	603-609
CROOK, J. F. AND GOOD, I. J. The robustness and sensitivity of the mixed-Dirichlet Bayesian test for "independence" in contingency tables .....	670-693
DAVIES, P. L. Asymptotic behaviour of $S$ -estimates of multivariate location parameters and dispersion matrices .....	1269-1292
DEAN, A. M. AND VOSS, D. T. A comparison of classes of single replicate factorial designs .....	376-384
DE JONGH, P. J. AND DE WET, T. Discussion of "The trimmed mean in the linear model" by Welsh .....	36-39
DEVROYE, LUC. An application of the Efron-Stein inequality in density estimation .....	1317-1320
DE WET, T. AND DE JONGH, P. J. Discussion of "The trimmed mean in the linear model" by Welsh .....	36-39
DE WET, TERTIUS AND RANGLES, RONALD H. On the effect of substituting parameter estimators in limiting $\chi^2$ $U$ and $V$ statistics .....	398-412
DIACONIS, PERSI. Discussion of "What is an analysis of variance?" by Speed .....	917-921
DOKSUM, KJELL A. An extension of partial likelihood methods for proportional hazard models to general transformation models .....	325-345
DUCHARME, G. R. AND MILASEVIC, P. Uniqueness of the spatial median .....	1332-1333

DZHPARIDZE, KACHA AND SIEDERS, ARTHUR. A large deviation result for parameter estimators and its application to nonlinear regression analysis .....	1031-1049
EATON, MORRIS L. AND OLKIN, INGRAM. Best equivariant estimators of a Cholesky decomposition .....	1639-1650
EDWARDS, DON. Extended-Paulson sequential selection .....	449-455
EPFS, T. W. Testing that a stationary time series is Gaussian ...	1683-1698
ERIKSEN, P. SVANTE. Proportionality of covariance matrices ...	732-748
FAIRLEY, DAVID, PEARL, DENNIS K. AND VERDUCCI, JOSEPH S. The penalty for assuming that a monotone regression is linear .....	443-448
FARALDO ROCA, P., GONZÁLEZ MANTEIGA, W. AND CRISTÓBAL CRISTÓBAL, J. A. A class of linear regression parameter estimators constructed by nonparametric estimation .....	603-609
FISHBURN, PETER C. AND LAVALLE, IRVING H. A nonlinear, nontransitive and additive-probability model for decisions under uncertainty .....	830-844
FRAMAN, RICARDO, YOHAI, VICTOR J. AND BOENTE, GRACIELA. Qualitative robustness for stochastic processes .....	1293-1312
GAFFKE, NORBERT. Further characterizations of design optimality and admissibility for partial parameter estimation in linear regression .....	942-957
GALLO, PAUL P., GLESEK, LEON JAY AND CARROLL, RAYMOND J. The limiting distribution of least squares in an errors-in-variables regression model .....	220-233
GHOSH, MALAY, NICKERSON, DAVID M. AND SEN, PRANAB K. Sequential shrinkage estimation .....	817-829
GLESEK, LEON JAY, CARROLL, RAYMOND J. AND GALLO, PAUL P. The limiting distribution of least squares in an errors-in-variables regression model .....	220-233
GLESEK, LEON JAY AND HWANG, JIUNN T. The nonexistence of $100(1 - \alpha)\%$ confidence sets of finite expected diameter in errors-in-variables and related models .....	1351-1362
GONZALEZ MANTEIGA, W., CRISTÓBAL CRISTÓBAL, J. A. AND FARALDO ROCA, P. A class of linear regression parameter estimators constructed by nonparametric estimation .....	603-609
GOOD, I. J. AND CROOK, J. F. The robustness and sensitivity of the mixed-Dirichlet Bayesian test for "independence" in contingency tables .....	670-693
GOOD, I. J. AND MITTAL, Y. The amalgamation and geometry of two-by-two contingency tables .....	694-711
GRAYBILL, FRANKLIN A. Discussion of "What is an analysis of variance?" by Speed .....	921-923

GUTMANN, SAM AND MAYMIN, ZAKHAR. Is the selected population the best? .....	456-461
HALL, PETER. On Kullback-Leibler loss and density estimation	1491-1519
HALL, PETER AND MARRON, J. S. On the amount of noise inherent in bandwidth selection for a kernel density estimator ....	163-181
HANNAN, E. J. AND HESSE, C. H. Discussion of "What is an analysis of variance?" by Speed .....	923-924
HERRMANN, NIRA AND SZATROWSKI, TED H. Sample size savings for curtailed one-sample nonparametric tests for location shift	296-313
HESSE, C. H. AND HANNAN, E. J. Discussion of "What is an analysis of variance?" by Speed .....	923-924
HORVÁTH, LAJOS AND YANDELL, BRIAN S. Convergence rates for the bootstrapped product-limit process .....	1155-1173
HSIEH, DAVID A. AND MANSKI, CHARLES F. Monte Carlo evidence on adaptive maximum likelihood estimation of a regression .....	541-551
HWANG, JIUNN T. AND GLESER, LEON JAY. The nonexistence of $100(1 - \alpha)\%$ confidence sets of finite expected diameter in errors-in-variables and related models .....	1351-1362
JEGANATHAN, P. Strong convergence of distributions of estimators .....	1699-1708
JENSEN, J. L. Standardized log-likelihood ratio statistics for mixtures of discrete and continuous observations .....	314-324
JOHNSON, RICHARD A. AND VERRILL, STEVE. The asymptotic equivalence of some modified Shapiro-Wilk statistics—complete and censored sample cases .....	413-419
JONES, LEE K. On a conjecture of Huber concerning the convergence of projection pursuit regression .....	880-882
KALLENBERG, WILBERT C. M. AND LEDWINA, TERESA. On local and nonlocal measures of efficiency .....	1401-1420
KARR, ALAN F. Maximum likelihood estimation in the multiplicative intensity model via sieves .....	473-490
KAUFMANN, HEINZ. Regression models for nonstationary categorical time series: Asymptotic estimation theory .....	79-98
KEENAN, DANIEL MACRAE. Limiting behavior of functionals of higher-order sample cumulant spectra .....	134-151
KEENER, ROBERT. A note on the variance of a stopping time ...	1709-1712
KEENER, ROBERT, ROTHMAN, EDWARD AND STARR, NORMAN. Distributions on partitions .....	1466-1481
KEMPTHORNE, OSCAR. Discussion of "What is an analysis of variance?" by Speed .....	925-929
KEMPTHORNE, PETER J. Estimating the mean of a normal distribution with loss equal to squared error plus complexity cost ..	1389-1400
KLAASSEN, CHRIS A. J. Consistent estimation of the influence function of locally asymptotically linear estimators .....	1548-1562

KOENKER, ROGER. Discussion of "The trimmed mean in the linear model" by Welsh .....	39-44
KOGURE, ATSUYUKI. Asymptotically optimal cells for a histogram .....	1023-1030
KOSCHAT, MARTIN A. A characterization of the Fieller solution ..	462-468
KOYAK, ROBERT A. On measuring internal dependence in a set of random variables .....	1215-1228
KREISS, JENS-PETER. On adaptive estimation in stationary ARMA processes .....	112-133
KUBOKAWA, TATSUYA. Admissible minimax estimation of a common mean of two normal populations .....	1245-1256
KUMAZAWA, YOSHIKI. On testing whether new is better than used using randomly censored data .....	420-426
KUNERT, J. AND MARTIN, R. J. On the optimality of finite Williams II(a) designs .....	1604-1628
LAI, TZE LEUNG. Adaptive treatment allocation and the multi-armed bandit problem .....	1091-1114
LAVALLE, IRVING H. AND FISHBURN, PETER C. A nonlinear, nontransitive and additive-probability model for decisions under uncertainty .....	830-844
LEDWINA, TERESA AND KALLENBERG, WILBERT C. M. On local and nonlocal measures of efficiency .....	1401-1420
LEUNG, PUI LAM AND MUIRHEAD, ROBB J. Estimation of parameter matrices and eigenvalues in MANOVA and canonical correlation analysis .....	1651-1666
LI, KER-CHAU. Asymptotic optimality for $C_p$ , $C_L$ , cross-validation and generalized cross-validation: Discrete index set .....	958-975
LIU, REGINA Y. AND SINGH, KESAR. On a partial correction by the bootstrap .....	1713-1718
LO, ALBERT Y. A large sample study of the Bayesian bootstrap ..	360-375
LO, ALBERT Y. AND CABRERA, JAVIER. Bayes procedures for rotationally symmetric models on the sphere .....	1257-1268
MAATTA, JON M. AND CASELLA, GEORGE. Conditional properties of interval estimators of the normal variance .....	1372-1388
MACK, Y. P. AND BHATTACHARYA, P. K. Weak convergence of $k$ -NN density and regression estimators with varying $k$ and applications .....	976-994
MALLIK, ASHIM K. A note on the buyer's problem .....	1329-1331
MANDELBAUM, AVI AND RÜSCHENDORF, LUDGER. Complete and symmetrically complete families of distributions .....	1229-1244
MANDELBAUM, AVI AND SHEPP, L. A. Admissibility as a touchstone .....	252-268
MANSKI, CHARLES F. AND HSIEH, DAVID A. Monte Carlo evidence on adaptive maximum likelihood estimation of a regression .....	541-551

MARRON, J. S. A comparison of cross-validation techniques in density estimation .....	152-162
MARRON, J. S. AND HALL, PETER. On the amount of noise inherent in bandwidth selection for a kernel density estimator .....	163-181
MARRON, J. S. AND PADGETT, W. J. Asymptotically optimal bandwidth selection for kernel density estimators from randomly right-censored samples .....	1520-1535
MARTIN, R. J. AND KUNERT, J. On the optimality of finite Williams II(a) designs .....	1604-1628
MAYER-WOLF, E., ZAKAI, M. AND BOBROVSKY, B. Z. Some classes of global Cramér-Rao bounds .....	1421-1438
MAYMIN, ZAKHAR AND GUTMANN, SAM. Is the selected population the best? .....	456-461
MAZLOUM, REDA AND MEEDEN, GLEN. Using the stepwise Bayes technique to choose between experiments .....	269-277
MCCULLAGH, PETER AND PREGIBON, DARYL. $k$ -statistics and dispersion effects in regression .....	202-219
MEEDEN, GLEN AND MAZLOUM, REDA. Using the stepwise Bayes technique to choose between experiments .....	269-277
MELKMAN, AVRAHAM A. AND RITOV, YA'ACOV. Minimax estimation of the mean of a general distribution when the parameter space is restricted .....	432-442
MILASEVIC, P. AND DUCHARME, G. R. Uniqueness of the spatial median .....	1332-1333
MILLAR, P. W. AND BERAN, R. Stochastic estimation and testing .....	1131-1154
MILLER, ROBERT B. AND CHO, SINSUP. Model-free one-step-ahead prediction intervals: Asymptotic theory and small sample simulations .....	1064-1078
MITTAL, Y. AND GOOD, I. J. The amalgamation and geometry of two-by-two contingency tables .....	694-711
MOOLGAVKAR, SURESH H. AND VENZON, DAVID J. Confidence regions in curved exponential families: Application to matched case-control and survival studies with general relative risk function .....	346-359
MUIRHEAD, ROBB J. AND LEUNG, PUI LAM. Estimation of parameter matrices and eigenvalues in MANOVA and canonical correlation analysis .....	1651-1666
MÜLLER, HANS-GEORG AND STADTMÜLLER, ULRICH. Estimation of heteroscedasticity in regression analysis .....	610-625
MÜLLER, HANS-GEORG AND STADTMÜLLER, ULRICH. Variable bandwidth kernel estimators of regression curves .....	182-201
NELDER, J. A. Discussion of "What is an analysis of variance?" by Speed .....	930-931
NEUHAUS, GEORG. Local asymptotics for linear rank statistics with estimated score functions .....	491-512



NICKERSON, DAVID M., SEN, PRANAB K. AND GHOSH, MALAY. Sequential shrinkage estimation .....	817-829
NOLAN, DEBORAH AND POLLARD, DAVID. <i>U</i> -processes: Rates of convergence .....	780-799
OLKIN, INGRAM AND EATON, MORRIS L. Best equivariant estima- tors of a Cholesky decomposition .....	1639-1650
PADGETT, W. J. AND MARRON, J. S. Asymptotically optimal bandwidth selection for kernel density estimators from ran- domly right-censored samples .....	1520-1535
PEARL, DENNIS K., VERDUCCI, JOSEPH S. AND FAIRLEY, DAVID. The penalty for assuming that a monotone regression is linear .....	443-448
POLLAK, MOSHE. Average run lengths of an optimal method of detecting a change in distribution .....	749-779
POLLARD, DAVID AND NOLAN, DEBORAH. <i>U</i> -processes: Rates of convergence .....	780-799
PREGIBON, DARYL AND MCCULLAGH, PETER. <i>k</i> -statistics and dispersion effects in regression .....	202-219
RANDLES, RONALD H. AND DE WET, TERTIUS. On the effect of substituting parameter estimators in limiting $\chi^2$ <i>U</i> and <i>V</i> statistics .....	398-412
RAO, J. N. K. AND SCOTT, A. J. On simple adjustments to chi- square tests with sample survey data .....	385-397
REGAZZINI, EUGENIO. de Finetti's coherence and statistical infer- ence .....	845-864
RINOTT, YOSEF AND SAMUEL-CAHN, ESTER. Comparisons of opti- mal stopping values and prophet inequalities for negatively dependent random variables .....	1482-1490
RITOV, Y. AND BICKEL, P. J. Efficient estimation in the errors in variables model .....	513-540
RITOV, YA'ACOV AND MELKMAN, AVRAHAM A. Minimax estima- tion of the mean of a general distribution when the parameter space is restricted .....	432-442
ROTHMAN, EDWARD, STARR, NORMAN AND KEENER, ROBERT. Distributions on partitions .....	1466-1481
RUPPERT, DAVID, SIMPSON, DOUGLAS G. AND CARROLL, RAYMOND J. <i>M</i> -estimation for discrete data: Asymptotic distribution theory and implications .....	657-669
RÜSCHENDORF, LUDGER AND MANDELBAUM, AVI. Complete and symmetrically complete families of distributions .....	1229-1244
SACKROWITZ, HAROLD B. AND COHEN, ARTHUR. Unbiasedness of tests for homogeneity .....	805-816
SALEH, A. K. M. EHSANES AND SEN, PRANAB KUMAR. On pre- liminary test and shrinkage <i>M</i> -estimation in linear models ...	1580-1592
SAMAROV, ALEXANDER M. Robust spectral regression .....	99-111

SAMUEL-CAHN, ESTER AND RINOTT, YOSEF. Comparisons of optimal stopping values and prophet inequalities for negatively dependent random variables .....	1482-1490
SCHRIEVER, B. F. An ordering for positive dependence .....	1208-1214
SCHUSTER, EUGENE F. Identifying the closest symmetric distribution or density function .....	865-874
SCOTT, A. J. AND RAO, J. N. K. On simple adjustments to chi-square tests with sample survey data .....	385-397
SEN, PRANAB K., GHOSH, MALAY AND NICKERSON, DAVID M. Sequential shrinkage estimation .....	817-829
SEN, PRANAB KUMAR AND SALEH, A. K. M. EHSANES. On preliminary test and shrinkage $M$ -estimation in linear models ...	1580-1592
SHAO, JUN AND WU, C. F. J. Heteroscedasticity-robustness of jackknife variance estimators in linear models .....	1563-1579
SHEPP, L. A. AND MANDELBAUM, AVI. Admissibility as a touchstone .....	252-268
SIEDERS, ARTHUR AND DZHAPARIDZE, KACHA. A large deviation result for parameter estimators and its application to nonlinear regression analysis .....	1031-1049
SIMPSON, DOUGLAS G., CARROLL, RAYMOND J. AND RUPPERT, DAVID. $M$ -estimation for discrete data: Asymptotic distribution theory and implications .....	657-669
SINGH, KESAR AND LIU, REGINA Y. On a partial correction by the bootstrap .....	1713-1718
SMITH, RICHARD L. Estimating tails of probability distributions .....	1174-1207
SPEED, T. P. Rejoinder .....	937-941
SPEED, T. P. What is an analysis of variance? .....	885-910
SRIRAM, T. N. Sequential estimation of the mean of a first-order stationary autoregressive process .....	1079-1090
STADTMÜLLER, ULRICH AND MÜLLER, HANS-GEORG. Estimation of heteroscedasticity in regression analysis .....	610-625
STADTMÜLLER, ULRICH AND MÜLLER, HANS-GEORG. Variable bandwidth kernel estimators of regression curves .....	182-201
STARR, NORMAN, KEENER, ROBERT AND ROTHMAN, EDWARD. Distributions on partitions .....	1466-1481
STUFKEN, JOHN. A-optimal block designs for comparing test treatments with a control .....	1629-1638
SZATROWSKI, TED H. AND HERRMANN, NIRA. Sample size savings for curtailed one-sample nonparametric tests for location shift .....	296-313
TAKAHASHI, HAJIME. Asymptotic expansions in Anscombe's theorem for repeated significance tests and estimation after sequential testing .....	278-295
TIERNEY, LUKE. An alternative regularity condition for Hájek's representation theorem .....	427-431



TJUR, TUE. Discussion of "What is an analysis of variance?" by Speed .....	931-932
TOBIAS, RANDALL D. Discussion of "What is an analysis of variance?" by Speed .....	932-936
TOSSTORFF, G. AND CHRISTOPEIT, N. Strong consistency of least-squares estimators in the monotone regression model with stochastic regressors .....	568-586
TUKEY, JOHN W. Discussion of "What is an analysis of variance?" by Speed .....	936-937
TYLER, DAVID E. A distribution-free $M$ -estimator of multivariate scatter .....	234-251
VAN DE GEER, SARA. A new approach to least-squares estimation, with applications .....	587-602
VAN HOUWELINGEN, J. C. Monotone empirical Bayes test for uniform distributions using the maximum likelihood estimator of a decreasing density .....	875-879
VENZON, DAVID J. AND MOOLGAVKAR, SURESH H. Confidence regions in curved exponential families: Application to matched case-control and survival studies with general relative risk function .....	346-359
VERDUCCI, JOSEPH S., FAIRLEY, DAVID AND PEARL, DENNIS K. The penalty for assuming that a monotone regression is linear .....	443-448
VERRILL, STEVE AND JOHNSON, RICHARD A. The asymptotic equivalence of some modified Shapiro-Wilk statistics—complete and censored sample cases .....	413-419
VOSS, D. T. AND DEAN, A. M. A comparison of classes of single replicate factorial designs .....	376-384
WALLEY, PETER. Belief function representations of statistical evidence .....	1439-1465
WANG, JIA-GANG. A note on the uniform consistency of the Kaplan-Meier estimator .....	1313-1316
WEI, C. Z. Adaptive prediction by least squares predictors in stochastic regression models with applications to time series ..	1667-1682
WEI, C. Z. Multivariate adaptive stochastic approximation .....	1115-1130
WEI, C. Z. AND CHAN, N. H. Asymptotic inference for nearly nonstationary AR(1) processes .....	1050-1063
WELSH, A. H. One-step $L$ -estimators for the linear model .....	626-641
WELSH, A. H. Rejoinder .....	44-45
WELSH, A. H. The trimmed mean in the linear model .....	20-36
WU, C. F. J. AND SHAO, JUN. Heteroscedasticity-robustness of jackknife variance estimators in linear models .....	1563-1579

YANDELL, BRIAN S. AND HORVÁTH, LAJOS. Convergence rates for the bootstrapped product-limit process .....	1155-1173
YANG, GRACE L. AND CHANG, MYRON N. Strong consistency of a nonparametric estimator of the survival function with doubly censored data .....	1536-1547
YAO, YI-CHING. Approximating the distribution of the maximum likelihood estimate of the change-point in a sequence of independent random variables .....	1321-1328
YLVISAKER, DONALD. Prediction and design .....	1-19
YOHAI, VICTOR J. High breakdown-point and high efficiency robust estimates for regression .....	642-656
YOHAI, VICTOR J., BOENTE, GRACIELA AND FRAIMAN, RICARDO. Qualitative robustness for stochastic processes .....	1293-1312
ZAKAI, M., BOBROVSKY, B. Z. AND MAYER-WOLF, E. Some classes of global Cramér-Rao bounds .....	1421-1438

#### Corrections

BERAN, RUDOLF AND SRIVASTAVA, MUNI S. Bootstrap tests and confidence regions for functions of a covariance matrix .....	470-471
DYKSTRA, RICHARD L. AND ROBERTSON, TIM. Order restricted statistical tests on multinomial and Poisson parameters: The starshaped restriction .....	469
MACGILLIVRAY, H. L. Skewness and asymmetry: measures and orderings .....	884
ROBERTSON, TIM AND DYKSTRA, RICHARD L. Order restricted statistical tests on multinomial and Poisson parameters: The starshaped restriction .....	469
SRIVASTAVA, MUNI S. AND BERAN, RUDOLF. Bootstrap tests and confidence regions for functions of a covariance matrix .....	470-471
WOODROOFE, M. Estimating a distribution function with truncated data .....	883

